AMSAT News Service Weekly Bulletins
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Sources: amsat-ans-1994-ans-036.01.txt, amsat-ans-1994-ans-036.02.txt, amsat-ans-1994-ans-036.03.txt, amsat-ans-1994-ans-036.04.txt, amsat-ans-1994-ans-036.05.txt, amsat-ans-1994-ans-036.06.txt

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SB SAT @ AMSAT $ANS-036.01
STS-60 SAREX Mission Begins

HR AMSAT NEWS SERVICE BULLETIN 036.01 FROM AMSAT HQ
SILVER SPRING, MD FEBRUARY 6, 1994
TO ALL RADIO AMATEURS BT
BID: $ANS-036.01

STS-60 News as of 3 February 1994 at 12:30 UTC

The Space Shuttle Discovery made a spectacular, historic, on-time liftoff this morning from the Kennedy Space Center. Discovery's launch marks the first joint U.S.-Russian Space Shuttle Flight. This will be the first of several joint missions planned in preparation for the development of the international Space Station. Cosmonaut Sergei Krikalev, U5MIR, was one of the six crew members on board this morning's Shuttle flight. His fellow American crew mates include Commander Charlie Bolden, KE4IQB, Pilot Ken Reightler, and Mission Specialists Jan Davis, Ron Sega, KC5ETH, and Franklin Chang-Diaz. The primary payloads on-board Discovery are the Wake Shield Facility, which will be deployed and retrieved during the flight and the Spacehab facility. Of particular interest to radio amateurs is the Shuttle Amateur Radio Experiment (SAREX) secondary payload. SAREX information for STS-60 including frequencies, callsigns and Keplerian elements, follows:

STS-60 Shuttle Amateur Radio Experiment (SAREX)
Information Sheet

Mission: STS-60 Space Shuttle Discovery
Wake Shield Facility & Spacehab-2 Mission

Launch: February 3, 1994, 12:10 UTC

Orbit: 57 degree inclination

Mission Length: 8 days (Nominal)

Amateur Radio Operators: Charlie Bolden, KE4IQB, Ron Sega, KC5ETH, Sergei Krikalev, U5MIR

Modes: FM Voice
Prime callsign: KE4IQB

Packet Radio
Callsign: W5RRR-1

Frequencies: All operations in split mode. Do not transmit on the downlink frequency.

Voice Freqs: Downlink: 145.55 MHz (Worldwide)
Uplinks: 144.91, 144.93, 144.95, 144.97, 144.99 MHz
(Except Europe)
144.70, 144.75, 144.80 MHz (Europe only)

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               Note:  the crew will not favor any specific uplink
               frequency, so your ability to work the crew will
               be the "luck of the draw"

Packet Freqs:  Downlink: 145.55 MHz
          Uplink:       144.49 MHz

Info:     Goddard Amateur Radio Club, WA3NAN, Greenbelt Maryland,
     SAREX Bulletins and Shuttle Retransmissions
     3860 KHz, 7185 KHz, 14,295 KHz, 21,395 KHz, 28,650 KHz
     and 147.45  MHz (FM)

     Johnson Space Center ARC, W5RRR, Houston, Texas
     SAREX Bulletins
     7225 KHz, 14,280 KHz, 21,395 KHz,  28,650 KHz, (SSB)
     and 146.64 MHz (FM)


     ARRL Amateur Radio Station, W1AW, Newington, CT
     SAREX News Bulletins
     3990, 7290, 14,290, 18,160, 21,390, and 28,590 KHz
     and 147.555 MHz (FM)

     Also, bulletins available on internet, via AMSAT ANS,
     Compuserve, and your local PBSS.

School Group Participation:   5 school groups will participate
                    in SAREX with pre-scheduled direct
                    and telebridge contacts.  These include
                    4 in the U.S., and one in Russia.


ANS wishes to thank Frank Bauer KA3HDO AMSAT VP for Manned Space Programs for
this information.

/EX
SB SAT @ AMSAT   $ANS-036.02
SAREX UPDATE AS OF FEB 6 at 00:30 UTC

HR AMSAT NEWS SERVICE BULLETIN 036.02 FROM AMSAT HQ
SILVER SPRING, MD FEBRUARY 6, 1994
TO ALL RADIO AMATEURS BT
BID: $ANS-036.02

SAREX Begins Operation

SAREX was officially activated at 14:27 UTC on February 4 with a
successful voice contact through the University of Surrey amateur radio
station.  Doug Loughmiller, G0SYX was the operator at the microphone to
intitate the first contact with the STS-60 crew.

The SAREX team reports a highly successful direct contact one orbit
later with a school group in Boise Idaho.  The contact, held at the
Discovery Center included students from several schools including the
Boise Senior High School.  19 students were able to ask direct questions
to Shuttle Commander Charlie Bolden.

The packet robot has also been quite active.  The packet QSO sequence
number exceeded the 800 mark about 30 hours after SAREX operations was
initiated.

Problems with RFI on the Wake Shield Facility have delayed the
deployment of this primary payload.  This has affected the SAREX payload
somewhat.  Currently, the Mars, Pennsylvania school contact, which was
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scheduled for today, has been postponed until the Wake Shield issues
have been resolved.

The official SAREX element set for today will be GSFC-003. Gil Carman,
WA5NOM reports that the predictions using GSFC-003 are 1 second later
than the current orbiter state vector.

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 1 22977U 94006A   94 35.13981770 0.00000202  00000-0  58718-5 0    37
 2 22977  56.9857 213.2731 0008535 263.0773  96.9324 15.72145611   115

 Satellite: STS-60
 Catalog number: 22977
 Epoch time:      94035.13981770         (04 FEB 94   03:21:20.25 UTC)
 Element set:     GSFC-003
 Inclination:       56.9857 deg
 RA of node:       213.2731 deg          Space Shuttle Flight STS-60
 Eccentricity:    0.0008535                  Keplerian Elements
 Arg of perigee:   263.0773 deg
 Mean anomaly:      96.9324 deg
 Mean motion:   15.72145611 rev/day      Semi-major Axis: 6730.8981 Km
 Decay rate:       0.20E-05 rev/day*2    Apogee  Alt:        358.25 Km
 Epoch rev:              11              Perigee Alt:        346.77 Km


 NOTE - This element set is based on NORAD element set # 003.
        The spacecraft has been propagated to the next ascending
        node, and the orbit number has been adjusted to bring it
        into agreement with the NASA numbering convention.
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ANS thanks Frank H. Bauer, KA3HDO, of the SAREX Working Group for this
item.

/EX
SB SAT @ AMSAT $ANS-036.03
AMSAT NET ON GALAXY 3

HR AMSAT NEWS SERVICE BULLETIN 036.03 FROM AMSAT HQ
SILVER SPRING, MD FEBRUARY 6, 1994
TO ALL RADIO AMATEURS BT
BID: $ANS-036.03

AMSAT NET ON GALAXY 3

Satellite users may be interested in an experimentbeing conducted in the
Houston, Texas area. The group there is uplinking the Houston Area Amsat Net,
heard locally on the 147.10 FM repeater, to Galaxy 3, Channel 17, 5.8 Mhz.
audio subcarrier (Shop-At-Home Channel). This net is carried in realtime on
Tuesday evening, from approximately 10PM (CST) until completion at
approximately 10:30 - 10:45 PM. This is an experiment but could
be continued on a regular basis if interest is sufficient. Please send reports
of your reception and your comments to: davidsonc@tcd.jsc.nasa.gov via
Internet, or call (713) 483-0078 during business hours, or during the uplink
period (713) 595-2393. Ask for Craig Davidson, WD5BDX.

ANS wishes to thank Craig Davidson WD5BDX for this information.

/EX
SB SAT @ AMSAT $ANS-036.04
OSCAR-21 CELEBRATES THIRD BIRTHDAY

HR AMSAT NEWS SERVICE BULLETIN 036.04 FROM AMSAT HQ
SILVER SPRING, MD FEBRUARY 6, 1994
TO ALL RADIO AMATEURS BT

BID: $ANS-036.04

OSCAR-21 CELEBRATES THIRD BIRTHDAY

On 29 January 1991 the first international Orbiting Satellite Carrying Amateur Radio (OSCAR) in which radio amateurs from the former Soviet Union (CIS) worked together with radio amateurs from Germany was successfully launched.

The official name of the project was RM1, which stands for "RADIO M-1". The digital transponder RUDAK-2 is part of RM1.

After the launch from the Northern Cosmodrome in Plesetsk, Russia the satellite was named as AMSAT-OSCAR 21, to emphasize that the spacecraft was built by, and for, Radio Amateurs around the world.

AMSAT OSCAR-21 is an attached secondary payload (Piggy-back) aboard the CIS geological research satellite "INFORMATOR-1".

OSCAR-21 (also known as RS-14) is a joint project between AMSAT-U in Russia and AMSAT-DL in Germany.

Two UUENCODED files which show the RUDAK hardware and two pictures taken from an original launch video have been uploaded to AMSAT-BB by DB2OS. The picture is compressed using CJPEG.

ANS thanks Peter Guelzow DB2OS for this item.

/EX
SB SAT @ AMSAT $ANS-036.05
AO-13 ZRO TEST SCHEDULES!

HR AMSAT NEWS SERVICE BULLETIN 036.05 FROM AMSAT HQ
SILVER SPRING, MD FEBRUARY 6, 1994
TO ALL RADIO AMATEURS BT
BID: $ANS-036.05

AO-13 ZRO Tests Begin For '94

AMSAT-OSCAR-13

ZRO TEST SCHEDULE

FEBRUARY-MARCH 1994

The ZRO Memorial Technical Achievement Award Program, or just "ZRO Test" has a new schedule for February and March, 1994, via AMSAT-OSCAR-13. This activity is a test of operating skill and equipment performance.

During a typical ZRO run, a control station will send numeric code groups using CW at 10 words-per-minute. At the beginning of the run, uplink power from the control station is set to match the general beacon downlink strength. This is level "zero". The control operator will send and repeat a random five-digit number, then lower his uplink power by 3 dB (half power) and repeat the procedure with a new random number (level "1"). This will continue to a level 30 dB below the beacon (level "A").

A participating listener monitors the downlink signals until he or she can no longer copy the numbers. Those who can hear the beacon will qualify for the basic award by copying the code group heard at level "zero". The challenge is to improve home-station performance to a point

where the lower-level downlink signals can be copied (levels 6 through A). To date, only one station, Darrel Emerson (AA7FV), has successfully copied level "A".

The following schedule of Mode "B" tests were chosen for convenient operating times and favorable squint angles. The tests can be heard on 145.840 MHz. Andy WA5ZIB will conduct all the tests. Mode "JL" tests will no longer occur due to the failure of AO-13's 70-cm transmitter.

Day	Date (UTC)	Time	Areas covered
Saturday	Feb. 12, 1994	2345 UTC	NA, SA, Europe, W. Africa
Sunday	Feb. 20, 1994	0330 UTC	NA, NW SA, Japan, Pacific
Saturday	Feb. 26, 1994	1930 UTC	NA, SA, Europe, Africa, ME
Saturday	Mar. 19, 1994	1930 UTC	NA, SA, Europe, Africa
Saturday	Mar. 26, 1994	2315 UTC	NA, SA

Note that the dates and days are shown in "UTC", thus the second test occurs at 9:30 PM CST Saturday night (the 19th). Any changes will be announced as soon as possible via the AMSAT HF and AO-13 Operations Nets.

All listener reports with date of test and numbers copied should be sent to Andy MacAllister WA5ZIB, AMSAT V.P. User Operations, 14714 Knights Way Drive, Houston, TX 77083-5640. A report will be returned verifying the level of accurate reception. An S.A.S.E. is appreciated but not required.

Information about the AMSAT Awards Program can be found on page 197 of the "Proceedings of the AMSAT-NA Tenth Space Symposium" (1992). This paper, covering all the AMSAT-NA awards including specifics on the ZRO Test, was reprinted on page 10 in the March/April 1993 issue of "The AMSAT Journal". The ZRO Test information provided in the article covers test procedures, means for obtaining certificates and gives some historical background about the program. Reprints of the article can be obtained for an S.A.S.E. to WA5ZIB at the address above.

/EX
SB SAT @ AMSAT $ANS-036.06
WEEKLY OSCAR STATUS REPORTS

HR AMSAT NEWS SERVICE BULLETIN 036.06 FROM AMSAT HQ
SILVER SPRING, MD FEBRUARY 6, 1994
TO ALL RADIO AMATEURS BT
BID: $ANS-036.06

Weekly OSCAR Status Reports: 6 FEB-94

AO-13: Current Transponder Operating Schedule:
L QST *** AO-13 TRANSPONDER SCHEDULE *** 1994 Jan 31-Apr 04
Mode-B : MA 0 to MA 90 |
Mode-BS : MA 90 to MA 120 |
Mode-S : MA 120 to MA 145 |<- S transponder; B trsp. is OFF
Mode-S : MA 145 to MA 150 |<- S beacon only
Mode-BS : MA 150 to MA 180 | Blon/Blat 180/0
Mode-B : MA 180 to MA 256 |
Omnis : MA 230 to MA 30 | Move to attitude 240/0, Apr 04
Poor Sun angle and battery testing need maximum OFF time.
[G3RUH/DB2OS/VK5AGR]

FO-20: The following is the current FO-20 operating schedule:
From January '94 thru March '94, the analog mode and the digital mode will be on alternately for a week at a time.
ANALOG MODE:

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               09-FEB-94 7:15 -TO- 16-FEB-94 7:40 UTC
             23-FEB-94 8:05 -TO- 02-MAR-94 6:40 UTC
             09-MAR-94 7:05 -TO- 16-MAR-94 7:30 UTC
             23-MAR-94 7:52 -TO- 30-MAR-94 8:15 UTC
      DIGITAL MODE: Unless otherwise noted above.
      [Kazu Sakamoto (JJ1WTK) qga02014@niftyserve.or.jp]

AO-21: ZL3VTV works AO-21 with great success from his QTH in Christchurch, New
       Zealand.  He reguarly works stations in Australia with ease using a
       a fixed 10 element beam pointed 30 deg above the horizon on the uplink
       and using a collinear antenna for the downlink.  ZL3VTV is looking for
       to work more ZL's and would entertain schedules.  [ZL3VTV @ZL3AC]


The AMSAT NEWS Service (ANS) is looking for volunteers to contribute weekly
OSCAR status reports.  If you have a favorite OSCAR which you work on a
regular basis and would like to contribute to this bulletin, please send
your observations to WD0HHU at his CompuServe address of 70524,2272, on
INTERNET at wd0hhu@amsat.org, or to his local packet BBS in the Denver, CO
area, WD0HHU @ W0LJF.#NECO.CO.USA.NOAM.  Also, if you find that the current
set of orbital elements are not generating the correct AOS/LOS times at
your QTH, PLEASE INCLUDE THAT INFORMATION AS WELL.  The information you
provide will be of value to all OSCAR enthusiasts.

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